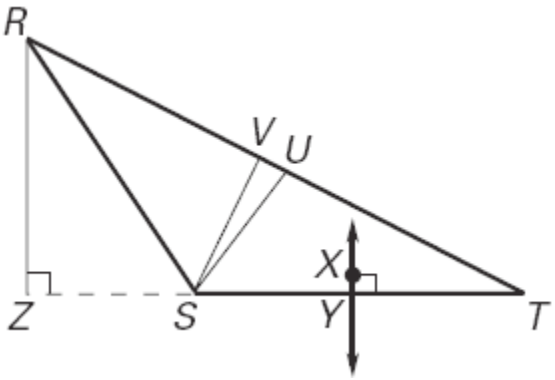
Geometry Date_____ 5.3 Assignment
Medians and altitudes of a triangle (pp 279-281)
Omit 24 & 26

1. What is your name?

Use the diagram shown and the given information to name each segment as one of the special segments of a triangle.

$m\angle RSV = m\angle TSV$, $RU = UT$, & $\overline{SY} \cong \overline{TY}$



2. $\overline{RZ}$

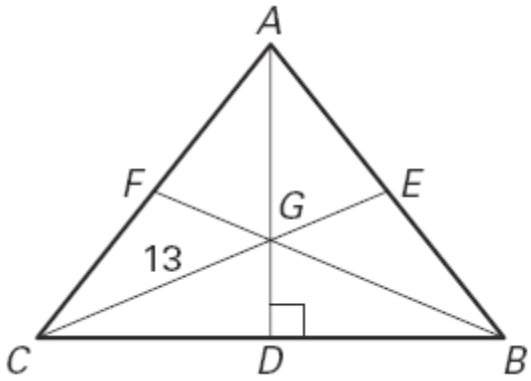
3. $\overline{SV}$

4. $\overline{SU}$

5. $\overline{XY}$

Use the figure shown and the given information.

G is the centroid of $\triangle ABC$, AD = 15, CG = 13, & $\overline{AD} \perp \overline{CB}$.



6. Find AG.

7. Find GD.

8. Find CD.

9. Find GE.

10. Find GB.

11. Find the perimeter of $\triangle ABC$.

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Write S if the sentence is sometimes true, A if the statement is always true, and N if the statement is never true.

12. The centroid of a triangle is the _____ circumcenter of the triangle.

13. The altitude from the vertex angle of an isosceles triangle is _____ the median.

14. The median to any side of an equilateral triangle is _____ the angle bisector.

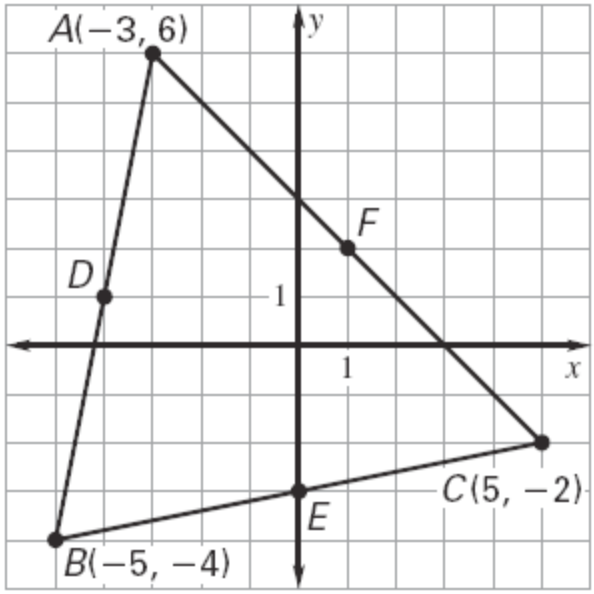
15. The altitudes of an acute triangle _____ intersect outside the triangle.

Use the graph shown.

16. Find the coordinates of D, the midpoint of $\overline{AB}$.

17. Find the length of the median, CD.

18. Determine the equation of line $\overleftrightarrow{CD}$.



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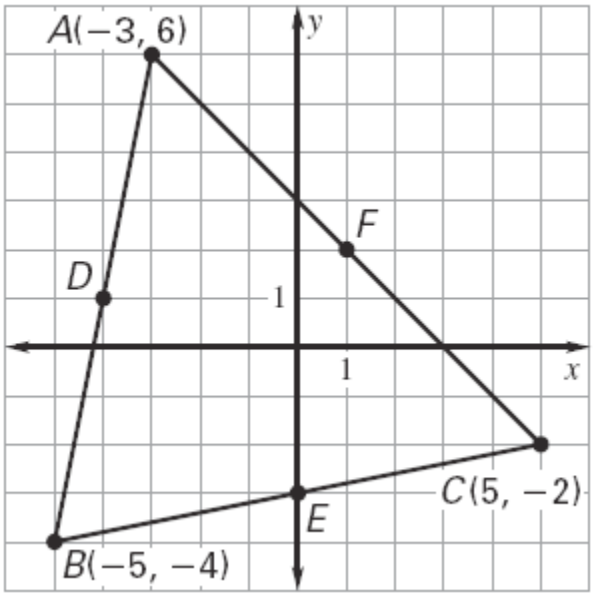
19. Find the coordinates of the centroid. Label this point at G.

20. Find the coordinates of E, the midpoint of $\overline{CB}$.



21. Determine the equation of $\overleftrightarrow{AE}$.

22. Show that $\frac{AG}{AE} = \frac{2}{3}$.

23. Determine the point of intersection of $\overleftrightarrow{CD}$ & $\overleftrightarrow{AE}$. Is the point of intersection G?

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Review.

Write an equation of the line that passes through point P and is parallel to the line with the given equation. (Chapter Section 3)

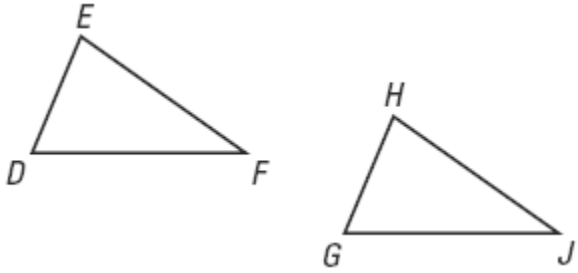
24. P(1, 7); y = -x + 3

25. P(4, -9); y = 3x + 5

26. P(-3, -8); y = -2x - 3

27. $P(4,-2); y=-\frac{1}{2}x-1$

State the third congruence that must be given to prove that $\triangle DEF \cong \triangle GHJ$ using the indicated postulate or theorem. (Chapter 4 Section 4)



28. Given: $\measuredangle D \cong \measuredangle G$, $\overline{DF} \cong \overline{GJ}$

AAS Congruence theorem

29. Given: $\measuredangle E \cong \measuredangle H$, $\overline{EF} \cong \overline{HJ}$

ASA Congruence Postulate

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30. Place a right triangle with legs of length 9 units and 13 units in a coordinate plane and find the length of the hypotenuse. (Chapter 4 Section 7)